

REMARKS

A petition for a one month extension of time has today been filed as a separate paper and a copy is attached hereto.

Regarding new claims 23 and 24, that the gas discharge line and discharge valve therein function to discharge residual air from the fuel chamber and out of the system is seen in Fig.1 as described in paragraph [0085]. That the pump serves to establish a negative pressure within the fuel chamber during the start-up phase is also taught in paragraph [0085] and recited in previously presented claim 22.

The Rejection of Claim 3 under 35 USC 112, First Paragraph (Paragraph 2 of Office Action)

In paragraph 2 of the office action, the examiner questions where the specification provides description corresponding to the language of claim 3. The rejection is traversed because the structure recited in claim 3 is shown in Fig. 19 of the drawings and described in paragraphs [0103] and [0097] of the substitute specification. That valves 72b and 73 are in parallel with valve 72a is clearly shown in FIG. 19 of the drawings. Parenthetically, it is not understood what the Examiner means by "identifying the support for suspending a stack" (last line of paragraph 2), which language may be the result of a word processing error.

The Rejection of Claims 1-6 and 22 for Anticipation by Yang

The rejection of claims 1-6 and 22 for anticipation over Yang is respectfully traversed for several reasons.

Firstly (a), Yang neither discloses nor suggests anything equivalent to the gas discharge line recited by claim 1 or, more specifically, by claims 22-24. Further, Yang neither discloses nor suggests a pump in the gas discharge line as recited by claims 22 and 24.

At page 8 of the office action the examiner explains that she reads the recited discharge line, discharge valve and pump on check valves 72 and 74 and pump 70 of Yang. However, check valves 72 and 74 and pump 70 of Yang are in a recirculation line wholly incapable of purging residual gas from the fuel chamber or from the system.

Secondly (b), Yang neither discloses nor suggests “pressure regulating means” for regulating the pressure of the flow of fuel gas into the fuel cell at one pressure upon startup and at a different pressure for later, normal operation in power generation. As the examiner correctly notes at page 4 of the office action, in paragraphs [0024] and [0026] Yang teaches that the flow of the fuel gas (hydrogen) to the anode is alternated between (1) flow at a rate providing a “higher than the required stoichiometric amount” and (2) no flow at all. No flow is not flow at any pressure. As Yang teaches in [0024], the pressure regulating device 64 is “set to be higher than the required Stoichiometric amount of the anode gas.” However, Yang nowhere suggests that the setting is changed, as the Examiner seems to imply. In the second full paragraph at page 4 of the

office action the examiner fails to appreciate the distinction between the state where “no more fresh anode gas is supplied” (no flow - Yang) and the state of “normal power generation” with a flow of fuel gas at a second, lower gas pressure (the present invention). Unlike Yang, the regulating means of the present switches between two different flows of fuel gas, i.e. differing with respect to pressure.

Stated differently, Yang does not disclose or suggest any “pressure regulating means” for changing a supply pressure between a start-up power generating state and a normal power generating state.

Thirdly, claim 1 has now been amended to define the “pressure regulating means” as switching between the two different flows of fuel gas, i.e. flows at two different pressures, by operation of the gas discharge valve, which the examiner would read on one or both of check valves 72 and 74. Of course, check valves 72 and 74 are wholly incapable of changing the pressure of the fuel gas in the recirculation line or elsewhere.

Claim 2

Yang does not disclose a sensor for detecting the concentration of the fuel gas within the fuel chamber of a fuel cell. At the bottom of page 9 of the office action, the Examiner confirms my suspicion, as stated in the third full paragraph of my letter to you dated October 24, 2006, where she writes:

“Since the pressure of hydrogen gas in a containment is directly related to its concentration in that containment, then a device which is capable of sensing the pressure of hydrogen gas in a containment is also capable of sensing its concentration in that containment.”

The problem with the Examiner’s argument is that pressure sensors 106 and 108 of Yang are remote from fuel cell 80, isolated therefrom by valving and are not sensing a pressure (and therefore not a concentration) within the fuel cell 80.

Claim 3

The examiner reads claim 3 on valves 62 and 64 of Yang. However, valves 62 and 64 of Yang are clearly in series, not in parallel as required by claim 3. Further 62 is an ON/OFF switch and placing it in parallel with 64 would allow gas to bypass pressure regulation by valve 64, contrary to the teaching of Yang.

Claim 22

As noted above, Yang neither discloses nor suggests a pump in a discharge line capable of purging residual gas from the fuel cell fuel chamber. Further pump 70 of Yang is incapable of establishing a negative pressure within the fuel chamber of a fuel cell.

Claim 23

As noted above Yang nowhere discloses a discharge line and discharge valve capable of purging a residual gas from a fuel chamber of a fuel cell.

Claim 24

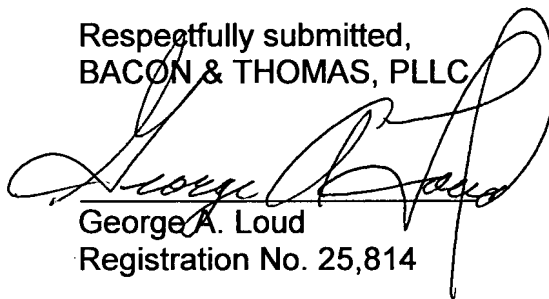
Claim 24 also recites a “pressure regulating means for switching between two different flows of fuel gas, i.e. flows at two different pressures and that this switching is by operation of the gas discharge valve, which the examiner would read on one or both of check valves 72 and 74. Again, check valves 72 and 74 are wholly incapable of changing the pressure of the fuel gas in the recirculation line or elsewhere.

Further, if one or both of the check valves 72 and 74 is the equivalent of applicants’ discharge valve, as alleged by the examiner, then the pressure regulating means of Yang can not be characterized as “in the fuel gas inflow line” while the pump is simultaneously located “in the discharge line between the fuel chamber and the discharge valve as recited by claim 24.

Still further, as noted above, Yang neither discloses nor suggests a pump in a discharge line capable of purging residual gas from the fuel cell fuel chamber. Further pump 70 of Yang is incapable of establishing a negative pressure within the fuel chamber of a fuel cell.

In conclusion, reconsideration of the rejections of record is respectfully requested.

Respectfully submitted,
BACON & THOMAS, PLLC

A handwritten signature in black ink, appearing to read "George A. Loud", is written over a horizontal line. The signature is stylized with large, flowing loops.

George A. Loud
Registration No. 25,814

June 7, 2007

Atty. Docket No.: KOBA3003/GAL

Customer No. 23364

Bacon & Thomas, PLLC
625 Slaters Lane, Fourth Floor
Alexandria, Virginia 22314
Telephone (703) 683-0500